1.0 DEFINITION AND PURPOSE

This Land Base Decanting Plan was prepared on behalf of the Environmental Unit (EU) supporting Unified Command (UC) to outline the general approach, procedures and considerations that will guide decanting operations on land, if in the course of recovery operations, it becomes necessary to drain off recovered water in order to increase the available capacity for additional recovered product.

Decanting is the process of draining off recovered water.

Based on a technical and toxicological review of the physical and chemical properties for products involved in the fire (e.g., Pyrolysis Gasoline, Xylene, Toluene, Naphtha, and Base Product), and response activities (e.g., fighting foam), as found on the Safety Data Sheets (SDSs), in conjunction with analytical data obtained during sample analysis from the breeched secondary containment structure, it is the recommendation of the EU that decanting from vacuum trucks and/or frac tanks be permitted as a means to increase operational working hours, and reduce the amount of waste being stored in the onsite recovery tanks.

Copies of the SDSs for the above products can be found in **Waste Management Plan.**

The inability to decant water from recovered product/water mixtures and return the excess water into the recovery area significantly reduces the volume of available temporary storage capacity, thus reducing the effectiveness of the vacuum trucks and recovery operations. The inability to return the excess water will delay recovery operations and possibly lead to a complete cessation of recovery operations until additional temporary storage can be arranged.

2.0 SAFETY CONSIDERATIONS

Safety is the most important consideration when implementing this plan. All site personnel will review and adhere to the incident Site Safety and Control Plan (ICS Form 208) and company/contractor-specific Health and Safety Plans (HASP), as applicable. Daily tailgate safety briefings will be conducted prior to going into the field. Additional safety briefings may be given prior to undertaking particular activities. Decanting will only be under weather or other environmental conditions that do not create unsafe working conditions and the appropriate personal protective equipment (PPE) will be utilized for each task. Any incident will be promptly reported in accordance with the site-specific site safety plan and UC-objectives.

3.0 OPERATION

Decanting from vacuum trucks and/or frac tanks will be limited to the Dock 4 and Tucker Bayou area. During operations tanks will be grounded and bonded during transfer of product. Each container will be allowed time to separate into phases (between 12 and 24 hours) before it is allowed to be released back into the water. Visual inspections by supervisor should be maintained at all times during decant operations. The subsequent released water should only

be released into areas that are blocked off to the rest of the channel by spill booms or other similar containment method, and should only be conducted during daylight hours in order to properly visually inspect for a sheen.

4.0 DURATION

This decanting request and subsequent UC approval is being sought for all subsequent land operations.

5.0 PRE-VAILING CONDITIONS

The pre-vailing weather conditions are updated throughout the operational periods and presented on the Situation Status display, Weather Report. Please consult this weather report prior to initiating decanting.

6.0 AUTHORIZATION

Although there is no pre-approval for decanting listed in the Central Texas Coastal Area Contingency Plan (CTCAC Plan), decanting will be considered on a case-by-case basis by UC.

Should decanting be authorized, it will only occur when it is essential to the continuing recovery of product and UC has determined that the net environmental damage will be minimized through this practice. The State's emergency authority to approve decanting in no way relieves regulated operators of the contingency plan requirements relating to emergency storage capacity. In addition to decanting, some activities, such as those associated with product recovery vessels, small boats and equipment cleaning operations may result in incidental discharges. This Land Decanting Plan will cover these activities which may be necessary to facilitate response operations on a continuing basis.

7.0 PROTECTIVE MEASURES AND ENVIRONMENTAL CONSIDERATIONS

The decanting operation will meet the following conditions:

1. Decanted waters must contain a lesser concentration of product contaminants, determined visually, then the product/water mixture being recovered.
2. **Decant water must be discharged into impacted waters or within the collection boom or area.**
3. Containers not equipped with a product/water separator must allow a specified retention time for product before decanting commences. Water to be decanted must be withdrawn a minimum of twelve inches below the product/water interface in any temporary storage tank.
4. Close control over the discharge system (valves/hoses) must be continually maintained by operating personnel to prevent discharge of concentrated products.

5. Opened valves must be maintained at a half-gate or less in order to prevent uncontrolled release.
6. If hoses are used, they are to properly capped and stored inside of secondary containment when not in use.
7. ITC representatives shall record all decanting operations including location of the decanting, time decanting started, time decanting stopped, and amount decanted.
8. If required USCG shall have access to the decanting operation for the purpose of evaluating its effectiveness and to collect samples or conduct real-time monitoring to the SMART Tier 2 protocols (e.g., using fluorometry).
9. Sampling of the effluent from the decanting process may be conducted periodically from each container conducting decanting to document the concentration of any product constituents re-entering the water as a result of this process. Sampling will be conducted in accordance with the Surface Water Sampling, Product, and Foam Sampling Plan prepared for this response and circulated for UC approval. Data will be managed in accordance with the Data Management Plan prepared for this response and being circulated for UC approval.

Supplemental Information

Behavior

Decanting takes advantage of the properties of water and the products involved in the incident to partially phase separate under calm conditions. Products involved in this incident have a lower specific gravity than water and consequently floats on top of the water. This allows the less contaminated water below the product "rag layer" to be extracted from the storage tank to increase the room available for storing more recovered product.

Decanted water is not pure, but it is substantially less contaminated than the original product-water mixture pumped into the initial storage tank. When first pumped into a storage tank from the recovery point (a skimming head, for example), the product and water are subjected to high mixing energy as it passes through the pump. The mixing energy of the pump can generate water-product emulsions and can also break some of the product into very small droplets. Both the creation of an emulsion and the smaller droplet sizes can slow the product-water separation process in the tank. The smaller product droplets take longer to refloat to the surface of the tank because they are less buoyant than larger droplets. In addition, the increased surface area of the smaller droplets (as compared to that of larger droplets) suspended in the water layer allows for greater exposure of the water layer to the small fraction of the product that is water soluble. These can include toluene, ethyl benzene, benzene and xylene. It should also be noted that the increased surface area of the smaller droplets at both the surface of the tank and in the decanted water stream allow for greater evaporation of the aromatics to the atmosphere.

The level of contamination found in the decanted water can be reduced by increasing the time allowed for the separation of the product and water phases either in the initial storage tank or in secondary storage. Settling time and decanting methodology will need to be determined on a case-by-case basis to minimize the degree of recontamination from the decanting discharge.

Spill Impact Mitigation Analysis (SIMA)

Considering the Spill Impact Mitigation Analysis (SIMA) determination regarding decanting assumes that storage of recovered product-water is a limiting factor. Containing and removing free floating product reduces the potential environmental impacts that would otherwise occur were it not contained and removed. Halting recovery operations raises the potential for contained product to escape and for uncontained product to continue moving through and impacting the environment. Decanting provides a net environmental benefit when compared with not decanting because it allows for the continuation of recovery operations.

Often, the concern about decanting focuses on the re-introduction of slightly contaminated decanted water to the environment. Decanted water will be discharged into water that is already contaminated or into the point where the product-water mixture was originally recovered (such as in the containment boom). If recovery operations halt because of storage limitations, the water column will continue to be exposed to the water-soluble components of the contained product until it is removed from the water surface. In short, by allowing the reintroduction of the trace amounts of product found in the decanted

water, the highest rate of removal of a greater source of contamination (i.e., the contained, free floating product) can be realized, thus providing a net environmental benefit.

Resources at Risk from Decanting in the Houston Ship Channel

In general, it is unlikely that the small amount of hydrocarbon present in the decanted water would represent any additional threat to those species present beyond that of the free floating hydrocarbons already in the area and that contained in the boom; however, prior to initiating decanting, operations will confirm the location(s) proposed for this activity with the US Coast Guard (USCG) and verify with the current Operation Period's ICS-232 for Resources at Risk which may be present during the decanting operations and are potentially at risk of exposure.